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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,539	08/28/2003	Roger P. Butterfield	BW-DKT02177	9038
32175	7590	08/10/2005	EXAMINER	
BORGWARNER INC. 3850 HAMLIN ROAD AUBURN HILLS, MI 48326			CHARLES, MARCUS	
			ART UNIT	PAPER NUMBER
			3682	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/650,539	Applicant(s) BUTTERFIELD, ROGER P.	
	Examiner Marcus Charles	Art Unit 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8-28-2003</u> . | 6) <input type="checkbox"/> Other: _____ |

A

DETAILED ACTION

This action is the first action relating to serial application number filed 08-28-2003.

Claims 1-10 are currently pending.

Drawings

1. The examiner has accepted the drawing filed with this application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5-6 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "type" renders the scope of the claims indefinite because it is not clear as to what type of inverted tooth is being referred to. It appears the claim is referring to types, which are not disclosed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2 and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avramidis (3,661,025) in view of Bremer. Avramidis disclosing the claimed invention including a plurality of links including a plurality of first and second set of links (S-1 and S-2); a plurality of bushings (RSB-2), each bushing passes through the

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apertures of the set of links and a pin (34) passes through each bushing to form a link chain, wherein rear surface of the bushing is tightly secured with no clearance to the apertures of the first set of links and the front surface is lightly secured with clearance to the second set of links. Avramidis fails to disclose one the diameter of the first aperture is tightly fits the bushing and the diameter of the second links loosely fits the outside diameter of the bushing. Bremer discloses a silent chain having a first set of links having apertures that are larger than a second set of links (see fig. 1 and 2) in order to reduce frictional wear and to allow lateral flexibility of the chain. Therefore, it would have been obvious to on of ordinary skill in the art at the time of the invention to modify the chain of Avramidis so that some of the links have larger diameter that a second set of links in view of Bremer in order to reduce frictional wear and to allow lateral flexibility of the chain.

In claim 2, note the second links along a centerline of the chain.

In claim 4-8, Avramidis discloses the claimed invention.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Avramidis in view of Bremer as applied to claim 1 above, and further in view of Belcher et al. (1,956,942). Avramidis in view of Bremer fail to disclose the second link is a non-inverted center guide link. Belcher et al. discloses a silent chain wherein the center link (17) is a non-inverted tooth guide link. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the chain system of Avramidis so that the center link in a non-inverted tooth guide link in view of Belcher et

al. in order to prevent the lateral sliding of the chain and to maintain alignment between the sprocket and the chain.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Avramidis in view of Bremer as applied to claim 1 above, and further in view of Mott (5,176,587). Avramidis and Bremer fail to disclose diameter of the pins is smaller than that of the inner diameter of the bushing. Mott discloses a chain comprising a plurality of bushing having an inner diameter smaller than the outer diameter of the pins. Therefore it would have been obvious to one of ordinary skill in the art the time of the invention to further modify the bushing and pins of Avramidis so that the outer diameter of the pin is smaller than the inner diameter of the bushing in view of Mott in order to provide for lateral flexibility and to reduce wear between the bushing and pins.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Avramidis in view of Bremer and Mott. Avramidis in view of Bremer discloses the claimed invention as in paragraph 5 above. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the chain of Avramidis so that some of the links have larger diameter than a second set of links in view of Bremer in order to reduce frictional wear and to allow lateral flexibility of the chain. Avramidis and Bremer fail to disclose the outer diameter of the pins is smaller than that of the inner diameter of the bushing. Mott discloses a chain comprising a plurality of bushing having an inner diameter smaller than the outer diameter of the pins. Therefore it would have been obvious to one of ordinary skill in the art the time of the invention to further modify the bushing and pins of Avramidis so that the outer diameter of the pin is smaller

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that the inner diameter of the bushing in view of Mott in order to provide for lateral flexibility and to reduce wear between the bushing and pins.


Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kozakura et al. (5,989,141) Varnam et al. (6,393,820), Salto (6,733,410), Reber (4,906,224), Pierce (2,047,833) and Kozakura et al. (5,989,141) disclose a silent chain.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus Charles whose telephone number is (571) 272-7101. The examiner can normally be reached on Monday-Thursday 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci can be reached on (571) 272-7099. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Marcus Charles
Primary Examiner
ART UNIT 3682
AUGUST 06, 2005